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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,926	12/10/2001	Rajeev Krishnamurthi	010121	5845

23696 7590 06/23/2009
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EXAMINER	
AHMED, SALMAN	

ART UNIT	PAPER NUMBER
2419	

NOTIFICATION DATE	DELIVERY MODE
06/23/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/015,926	KRISHNAMURTHI ET AL.	
	Examiner	Art Unit	
	SALMAN AHMED	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _22 April 2009_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,2 and 5-68_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _1,2,5,45-60,64 and 66_ is/are allowed.

6)☒ Claim(s) _6-44,61-63,65,67 and 68_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _12/10/2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _1/14/2009_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claims 1-2 and 5-68 are pending.

Claims 6-44 and 61-63, 65, 67 and 68 are rejected.

Claims 1, 2, 5, 45-60, 64 and 66 are allowed.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 6, 7, 8, 10, 28, 29, 30, 31, 39, 61, 63, 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakadura et al. (US PAT 5357557), hereinafter referred to as Sakadura in view of Engbersen (US PAT 6031845, hereinafter Engbersen).

In regards to claims 6, 7, 8, 10, 30 and 31 Sakadura teaches a method for testing one or more channels in a wireless data communication system (system in figure 2), comprising: receiving a first data transmission comprising test packets of known test data via a first channel (column 3 lines 1-5, the test data is predetermined pattern data, e.g., "100111001". These test conditions are input through the console 11 for each terminal to be sequentially down-loaded (i.e. received) therein. The channel and direction used to transmit this pattern from cellular automobile telephone exchange 20 to terminal 31 is interpreted as first/forward channel); identifying parameter values descriptive of the test packets in the first data transmission and excluding known test data, forming a second data transmission with the identified parameter values for the received test packets; and transmitting the second data transmission via a second channel (column 3 lines 40-44, Upon reception of the accumulated test result, the start-point terminal 31 transmits the result (i.e. interpreted as loop back packets) to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as second/reverse channel).

Sakakura does not explicitly teach parameter values for each test packet comprise at least one of a serving sector from which the test packet was received, a sequence number of the test packet, and a length of the test packet. In regards to claim 8, Sakakura teaches the second data transmission comprises a plurality of loop back packets but does not explicitly teach loop back packets include the parameter values descriptive of the test packets.

Engbersen teaches (abstract, column 19 lines 17-20, For detecting errors, the test information would include an input address indicating the source of the test packet, a sequence number defining the order in which the packet should arrive at the destination, time bits relating to the packet length and/or to the expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Each analyzer at a receiving station operates autonomously from the senders and processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Based on this information, the transputer either performs statistical computations (e.g. counting of the faulty events) (i.e. interpreted as updating varibles)). Further, in regards to claims 30 and 31, regarding packet error rate, Engbersen teaches error detection is performed by analyzing the arriving packets at the output of the assumed fault path for unexpected contents.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sakakura's system/method with the steps of parameter values for each test packet comprise at least one of a serving sector from which the test packet was received, a sequence number of the test packet, and a length of the test packet as suggested by Engbersen. The motivation is that (as suggested by Engbersen, abstract) such method enables analyzer at a receiving station operates autonomously from the senders and processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Known work in one field of endeavor may prompt variations of it for use

in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

In regards to claim 28 Sakadura teaches a memory communicatively coupled to a digital signal processing device (DSPD) (figure 1, apparatus 20 having associated processor and memory) and teaches all the limitations of claim 6 above and are rejected using the same rationale.

In regards to claim 68, Sakadura teaches an apparatus (Figure 2, cellular automobile telephone exchange 20) in a wireless data communication system comprising: means for processing a plurality of test packets of known test data for transmission via a forward traffic channel (column 3 lines 1-5, the test data is predetermined pattern data, e.g., "100111001". These test conditions are input through the console 11 for each terminal to be sequentially down-loaded therein. The channel and direction used to transmit this pattern from cellular automobile telephone exchange 20 to terminal 31 is interpreted as forward channel); means for processing a plurality of loop back packets received via a reverse traffic channel, wherein each loop back packet covers zero or more test packets, excludes known test data, and includes a transmission source (column 3 lines 40-44, Upon reception of the accumulated test result, the start-point terminal 31 transmits the result to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as reverse channel).

Sakakura does not explicitly teach a sequence number of each covered test packet; and means for updating a plurality of variables for a plurality of transmission sources based on the transmission source and the sequence number of each test packet covered by the received packets.

Engbersen teaches (abstract, column 19 lines 17-20, For detecting errors, the test information would include an input address indicating the source of the test packet, a sequence number defining the order in which the packet should arrive at the destination, time bits relating to the packet length and/or to the expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Each analyzer at a receiving station operates autonomously from the senders and processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Based on this information, the transputer either performs statistical computations (e.g. counting of the faulty events) (i.e. interpreted as updating varibles)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sakakura's system/method with the steps of a sequence number of each covered test packet; and means for updating a plurality of variables for a plurality of transmission sources based on the transmission source and the sequence number of each test packet covered by the received packets as suggested by Engbersen. The motivation is that (as suggested by Engbersen, abstract) such method enables analyzer at a receiving station operates autonomously from the senders and

processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

In regards to claim 67, Sakadura teaches an access point (Figure 2, cellular automobile telephone exchange 20), a transmit data processor (figure 2, base station unit 15), receive data processor (figure 2, base station unit 15) while Engbersen teaches a controller (transputer) and teaches all the limitations of claim 68 and claim 67 is rejected using similar rationale.

Claim 29 teaches all the limitations of claim 68 above and thus rejected using the same rationale.

In regards to claim 39 Sakadura teaches a memory communicatively coupled to a digital signal processing device (DSPD) (figure 1, apparatus 20 having associated processor and memory) and teaches all the limitations of claim 68 above and are rejected using the same rationale.

In regards to claims 61 and 63 Sakadura teaches all the limitations of claims 68 and 67 above and are rejected using the same rationale.

4. Claims 62 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakadura et al. (US PAT 5357557), hereinafter referred to as Sakadura in view of Engbersen (US PAT 6031845, hereinafter Engbersen) and Kobayasi.

In regards to claim 62 and 65 Sakadura and Engbersen teaches all the limitations of their respective independent claims above but do not explicitly teach a queue for the test packets.

In regards to claims 62 and 65 Kobayasi teaches buffers (fig 132) for data packets.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sakadura and Engbersen's teaching by incorporating the loopback test scheme as taught by Kobayasi. The motivation is that (as suggested by Kobayasi column 317 lines 29-34) the present invention realizes an efficient test within a short time by performing a test cell loopback check, which has been made in a test device, through a test program in the switch. Additionally, transmitting cell data from a test device requires no testing units because the loopback jig can replace the testing units. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

5. Claims 11-13, 15-20, 22, 23, 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakadura and Engbersen as applied to claim 8 above and further in view of Kobayasi.

In regards to claims 11, 12, 13, 15-20, 22, 23, 25, 26 and 27 Sakadura and Engbersen teach a method for testing one or more channels in a wireless data

communication system, comprising: receiving a plurality of test packets via a forward traffic channel as described in the rejections of claim 8 above.

Sakadura and Engbersen do not explicitly teach of having protocol type, packet type, number of records field, time interval, source address, sequence number in the test packet.

Kobayasi in the same field of endeavor teaches protocol type, packet type, number of records field, time interval, source address, sequence number in the packets shown in FIGS. 582 through 628. In regards to claims 13 and 20 Kobayasi teaches (column 3 lines 5-10) that since the source SW station 3 and the terminal SW station 6 mark the time stamp onto the payload field of the packet, the OS center 1 is informed of the transmission time of packets according to the information.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sakadura and Engbersen's system/method by incorporating the loopback test scheme as taught by Kobayasi. The motivation is that (as suggested by Kobayasi column 317 lines 29-34) the present invention realizes an efficient test within a short time by performing a test cell loopback check, which has been made in a test device, through a test program in the switch. Additionally, transmitting cell data from a test device requires no testing units because the loopback jig can replace the testing units. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

6. Claims 32-33 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numminen in view of Walding, Dipperstein and Gillespie (US PAT 6014377).

In regards to claims 32 and 33 Numminen teaches a method for testing the forward link for specific configuration of one or more auxiliary channels (column 11 lines 4-6, traffic and control channels) in wireless data communication system, comprising: receiving a first message having included therein test settings selected *from among a plurality of possible test settings* (column 7 lines 18-20 and column 11 lines 4-6, test mode means that the mobile station to be tested is instructed to maintain a connection on a certain transmission channel (i.e. data, traffic or control channel). Applicability of the invention to all mobile communication systems in which a mobile station can operate on data, traffic and control channels (i.e. plurality of possible test settings are related to testing data, traffic or control channel)) for one or more auxiliary channels (column 6 lines 54-56, column 6 lines 66-67 and column 7 lines 1-8, (after selecting data, traffic or control channel) the test equipment sends an immediate assignment 503 which may include various instructions (i.e. record) for the mobile station. Particularly the immediate assignment 503 contains so-called test octets (i.e. record) in which the first two bits indicate the contents of the test of the rest octet. By the priority date of this patent application values 11 and 10 of the values of the first two bits of the rest octet have been reserved but values 01 and 00 are unused. In accordance with a preferred embodiment of the invention at least one of these values

can be reserved to indicate that in response to the immediate assignment 503 the mobile station to be tested has to set itself in a special test mode); configuring each auxiliary channel based on test settings applicable to the auxiliary channel (column 7 lines 46-50, At first the test equipment sends a comparison and statistical operation start command associated with the data channel, which command can be called CLOSE_Multi-slot_loop_CMD. The close command may include an identifier on the basis of which the mobile station identifies the G loop. Numminen further teaches (column 11 lines 4-6) mobile station can perform testing on traffic and control channels (i.e. auxiliary channel) as well); and transmitting each configured auxiliary channel on reverse link in accordance with the applicable test settings (column 2 lines 24-31, The method according to the invention is characterized in that it is comprised of steps wherein a test signal is received in the downlink direction, the test signal received is compared with a known form of the test signal, information produced by the comparison about errors detected in the received test signal is stored, and a signal representing the information stored is sent uplink) to test the configured auxiliary channel (column 7 lines 18-20 and column 11 lines 4-6, test mode means that the mobile station to be tested is instructed to maintain a connection on a certain transmission channel. Applicability of the invention to all mobile communication systems in which a mobile station can operate on data, traffic and control channels (i.e. overhead or auxiliary channels)). Numminen teaches in column 1 lines 35-40, Tests usually employ a technique in which a mobile station receives a downlink frame from the SS and sends back to the SS a corresponding uplink frame which contains the equivalent number of bits. The mobile

station may even recycle to the SS the same individual bits that it received in the downlink direction.

Numminen teaches auxiliary channel (column 11 lines 4-6, traffic and control channels), but does not explicitly teach auxiliary channel carry signaling.

Walding in the same field of endeavor teaches the overhead channel (i.e. auxiliary channel) is provided for carrying control information (i.e. signaling packets) used to establish and maintain the downlink and uplink communication paths (column 1 lines 48-50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen's system/method by incorporating the steps of signaling data being sent via auxiliary channel as suggested by Walding. The motivation is that (as suggested by Walding, column 1 lines 48-50) the overhead channel (i.e. auxiliary channel) is provided for carrying control information (i.e. signaling packets) used to establish and maintain the downlink and uplink communication paths. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Numminen and Walding does not explicitly teach test settings selected comprise indications for configuring each channel and indications of procedures to be performed by each channel during testing.

Dipperstein in the same field of endeavor teaches test settings selected comprise indications for configuring each channel and indications of procedures to be performed

by each channel during testing (column 3 lines 11-17, claims 6, 13 and 14, In accordance with the eoc-based message exchange sequence, a user or craftsperson operating a sourcing test set (as an LT device at the central office) activates a MENU key on the test set keypad, which causes the test set's LCD display panel to display a list of options (i.e. test settings indications) available to the user, one of which is a bit error test (BERT). in response to a user invoking an input/output element of test set associated with a bit error test, conducting a command-response message exchange over auxiliary ISDN channel, through which device clears loopbacks, and then loops back one or more ISDN bearer channels (i.e. traffic channel), and supervisory control processor is operative, in response to a user invoking an input/output element of test set associated with a bit error test, to conduct a command-response message exchange over auxiliary ISDN channel, through which device clears loopbacks, and then loops back one or more ISDN bearer channels and, in response to far end device looping back one or more bearer channels, conducting a bit error rate test over looped back one or more bearer channels, and providing an indication of a result of bit error rate test supervisory control processor is operative, in response to a user invoking an input/output element of test set associated with a bit error test, to provide a list of prescribed test parameter options for entry by the user and, in response to said user entering test parameter options, to transmit a first command message over auxiliary ISDN channel instructing device to clear loopbacks and, in response to device clearing loopbacks, to transmit a second command message over auxiliary ISDN channel instructing device to loop back said one or more ISDN bearer channels).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen and Walding's system/method by incorporating the steps of test settings selected comprise indications for configuring each auxiliary channel and indications of procedures to be performed by each auxiliary channel during testing as suggested by Dipperstein. The motivation is that by providing indications for configuration of various different channels the test environment becomes robust and flexible and enables a test set and a remote device, exchange digital communication messages over various designated channels that are effective to cause the device to provide a loopback path over at least one channel to the test set and test a prescribed operational characteristic of the link. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Numminen, Walding and Dipperstein do not explicitly teach testing Auxiliary control channel.

Gillespie in the same or similar field of endeavor teaches testing Auxiliary control channel (column 5 lines 55-58).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen, Walding and Dipperstein's system/method by incorporating the steps of testing Auxiliary control channel as suggested by Gillespie. The motivation is that such method enables the system to diagnose all channels of communication for performance, reliability and interference among other things; thus

making the system optimum. Known work (i.e. diagnose all channels) in one field of endeavor (Gillespie prior art) may prompt variations of it for use in either the same field or a different one (Numminen, Walding and Dipperstein prior art) based on design incentives (i.e. performance, reliability and interference) or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

In regards to claims 35-37 Numminen teaches the first message includes a test setting for a particular bit value to be transmitted on an acknowledgment (ACK) channel (column 6 lines 54-56, column 6 lines 66-67 and column 7 lines 1-8, the test equipment sends an immediate assignment 503 which may include various instructions for the mobile station. Particularly the immediate assignment 503 contains so-called rest octets in which the first two bits indicate the contents of the rest of the rest octet. By the priority date of this patent application values 11 and 10 of the values of the first two bits of the rest octet have been reserved but values 01 and 00 are unused. In accordance with a preferred embodiment of the invention at least one of these values can be reserved to indicate that in response to the immediate assignment 503 the mobile station to be tested has to set itself in a special test mode) or the first message includes a test setting (column 6 lines 54-56, column 6 lines 66-67 and column 7 lines 1-8, the test equipment sends an immediate assignment 503 which may include various instructions for the mobile station. Particularly the immediate assignment 503 contains so-called rest octets in which the first two bits indicate the contents of the rest of the rest octet. By the priority date of this patent application values 11 and 10 of the values of the first two bits of the rest octet have been reserved but values 01 and 00 are unused.

In accordance with a preferred embodiment of the invention at least one of these values can be reserved to indicate that in response to the immediate assignment 503 the mobile station to be tested has to set itself in a special test mode) for a particular value to be transmitted on a data rate control (DRC) channel or the first message includes a test setting (column 6 lines 54-56, column 6 lines 66-67 and column 7 lines 1-8, the test equipment sends an immediate assignment 503 which may include various instructions for the mobile station. Particularly the immediate assignment 503 contains so-called rest octets in which the first two bits indicate the contents of the rest of the rest octet. By the priority date of this patent application values 11 and 10 of the values of the first two bits of the rest octet have been reserved but values 01 and 00 are unused. In accordance with a preferred embodiment of the invention at least one of these values can be reserved to indicate that in response to the immediate assignment 503 the mobile station to be tested has to set itself in a special test mode) for a particular cover to be used for a data rate control (DRC) channel (column 6 lines 20-61).

In regards to claim 38 Numminen teaches the first message includes a test setting indicative of maintenance of a test mode in event of a connection closure or a lost connection (column 7 lines 18-20, So test mode means that the mobile station to be tested is instructed to maintain a connection on a certain transmission channel. The mobile station is kept in the test mode by Layer 3 signaling).

7. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Numminen, Walding, Dipperstein and Gillespie as applied to claim 32 above and further in view of Gopalakrishnan et al. (US PAT 7110466, hereinafter Gopalakrishnan).

In regards to claim 34 Numminen teaches auxiliary channels being used for signaling (column 11 lines 4-6, traffic and control channels and column 6 lines 54-56, the test equipment sends an immediate assignment 503 which may include various instructions for the mobile station).

Numminen, Walding, Dipperstein and Gillespie do not explicitly teach auxiliary channels comprise at least one of an acknowledgment (ACK) channel and a data rate control (DRC) channel

Gopalakrishnan in the same field of endeavor teaches control channel (auxiliary channel) being DRC channel (column 1 lines 42-43).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen, Walding, Dipperstein and Gillespie's system/method by incorporating the steps of control channel being DRC channel as suggested by Gopalakrishnan. The motivation is that (as suggested by Gopalakrishnan, column 1 lines 42-48) the pilot/DRC channel is transmitted by the mobile to provide the base station with a pilot signal that the base station uses to reliably demodulate other transmissions from the mobile to the base station and further the pilot/DRC is also used to provide the base station with data rate request information from the mobile to efficiently control transmission rate. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design

incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakadura and Engbersen as applied to claim 8 above and further in view of Funk.

In regards to claim 9, Sakadura and Engbersen teach sending loopback packet as described in the rejections of claim 8 above.

Sakadura and Engbersen do not explicitly teach one loop back packet is formed for each particular time interval.

Funk in the same field of endeavor teaches (Column 3 lines 61-67) test packets being formed for particular time interval.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sakadura and Engbersen's method by incorporating one loop back packet being formed for each particular time interval as taught by Funk. The motivation is that generating and sending test packets at regular interval helps to diagnose a communication system very efficiently and effectively. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakadura and Engbersen as applied to claim 6 above and further in view of Buchholz et al. (US PAT 5555266), hereinafter referred to as Buchholz.

In regards to claim 24, Sakadura and Engbersen teach loopback packets as described in the rejections of claim 6 above.

Sakadura and Engbersen do not explicitly teach each packet on the second data transmission includes a parameter value indicative of omission of one or more packets received on the first data transmission.

Buchholz in the same field of endeavor teaches in response to the receipt of a data packet (310) from a remote unit (112), the communications controller (110) identifies missing data within the data packet transmission, determines whether communication resources are available to support retransmission of the missing data, and if so, transmits a response to the requesting remote unit identifying the missing data.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sakadura and Engbersen's system by incorporating the method of notifying sender about missing data as taught by Buchholz. The motivation is that such method will accurately notify the sender about any problems in the communication link, which results in loss of packets; thus making the network more reliable. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market

forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

10. Claims 61-63 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numminen, in view of Kobayasi et al. (US PAT 999), hereinafter referred to as Kobayasi and Sjoblom (US PAT PUB 2002/0009053).

In regards to claims 61-63 and 65 Numminen teaches receiving a plurality of test packets of known test data (column 1 lines 36-37 and column 8 lines 6-12, a mobile station receives a downlink frame from the SS, i.e. SS sends a first data channel transmission. In an alternative embodiment the information bits in the downlink frames may also include non-random bit combinations which will be particularly examined for reception errors. Naturally the mobile station tested must know about the use of such bit combinations just as it knows about the use of the pseudorandom bit sequences) via a forward traffic channel, forming a plurality of loop back packets for the plurality of received test packets, wherein each loop back packet covers zero or more test packets; and transmitting the loop back packets via reverse traffic channel (column 1 lines 37-39, a mobile station receives a downlink frame from the SS and sends back to the SS a corresponding uplink frame which contains the equivalent number of bits. The mobile station may even recycle to the SS the same individual bits that it received in the downlink direction).

Numminen does not explicitly teach identifying a transmission source of each received packet; packet excluding known test data includes the transmission source of

each covered test packet and forming a plurality of loop back packets includes the source number of each covered test packet. In regards to claim 62 and 65 Numminen does not explicitly teach a queue for the test packets.

Kobayasi in the same field of endeavor teaches, (column 2 lines 55-67) a test being started by issuing a test connectionless packet transmission request message (test start request) from the OS center 1 to SW station 3. The request message contains an identification information ID indicating terminal SW station 6. SW station 3 generates a test packet with the identification address of terminal SW station 6 set as its destination address DA and the identification address of its home station (SW station 3) set as its source address SA. The test packet is output to terminal SW station 6. In SW stations 4 and 5, test packets are processed as normal packets and transferred to terminal SW station 6. On receipt of the test packet, terminal SW station 6 outputs the packet with its DA and SA inverted. That is, the packet is returned from terminal SW station 6 to SW station 3, and it is reported to the OS center 1 upon re-arrival of the packet at the source SW station 3. Kobayasi teaches (column 97 lines 45-46) Loopback of a test cell is done in a 156 Mbps cell highway. In regards to claims 62 and 65 Kobayasi teaches buffers (fig 132) for data packets.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen’s teaching by incorporating the loopback test scheme as taught by Kobayasi. The motivation is that (as suggested by Kobayasi column 317 lines 29-34) the present invention realizes an efficient test within a short time by performing a test cell loopback check, which has been made in a test device,

through a test program in the switch. Additionally, transmitting cell data from a test device requires no testing units because the loopback jig can replace the testing units. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Numminen and Kobayasi do not explicitly teach identifying sequence number in test packets and forming test packets including the sequence number.

Sjoblom in the same field of endeavor teaches identifying sequence number in test packets and forming test packets including the sequence number (paragraphs 0023 and 0026).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen and Kobayasi's teaching by incorporating the steps of identifying sequence number in test packets and forming test packets including the sequence number as suggested by Sjoblom. The motivation is that the sequence number SN is a serial number assigned to a transferred cell for convenience in detecting the cell if it is lost or mistakenly inserted; thus enabling a reliable communication. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

In regards to claim 61 Numminen teaches a receive data processor (figure 3 element 304), a transmit data processor (figure 3 element 310) and a controller (figure 3 element 307).

11. Claims 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numminen in view of Oommen et al. (US PAT 6799203) and Tiedemann.

In regards to claims 40-44 Numminen teaches receiving a plurality of test packets via a forward traffic channel as described in the rejections of claim 1 above. In regards to claims 40, 41, 42 and 43 Numminen teaches a method of collecting data for a first parameter while in idle state and not exchanging data via the link (column 10 lines 1-8, In addition to the testing described above the invention is applicable when a mobile station or a terminal of a cellular radio system in general is in normal use, i.e. moving with its user within the area of the cellular radio system. Then it is for most of the time in the so-called idle mode (i.e. idle state) in which it receives from base stations certain downlink messages and sends occasionally location update messages (i.e. collecting data for a first parameter “location area”) uplink. The cellular radio system knows at all times the location of every idling mobile station (i.e. first statistics being transmitted data of “location area” for every idling mobile station) with the accuracy of a so-called location area (LA) at least). Numminen teaches collecting a second statistic for a second parameter different from the first parameter while in connected state and exchanging data via the link (column 7 lines 46-47 and column 7 lines 59-61, column 9 lines 10-11 and column 8 lines 29-39, while the G loop is active the mobile station

compares the received bit sequence portions to the locally produced portions and measures e.g. the bit error ratio or frame erasure ratio and compiles statistics of the measurement results in a desired manner. Complete statistics or information elements representing the reception error status in general are sent uplink to the test equipment. At first the test equipment sends a comparison and statistical operation start command associated with the data channel. The mobile station activates the test loop in a certain time after it has sent the acknowledge). Numminen teaches receiving a first message requesting the first or second statistic, and sending a second message with the requested first or second statistic (column 8 lines 29-39, while the G loop is active the mobile station compares the received bit sequence portions to the locally produced portions and measures e.g. the bit error ratio or frame erasure ratio and compiles statistics of the measurement results in a desired manner. Complete statistics or information elements representing the reception error status in general are sent uplink to the test equipment).

In regards to claims 40-43 Numminen does not explicitly teach, collecting statistics during each of the transactions.

Oommen in the same field of endeavor teaches (column 2 lines 46-49) OTAMD involves requesting statistics and performing diagnostic tests in the MS using a command issued from the network for testing purpose.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen's teaching by incorporating the statistic gathering during transactions as taught by Oommen. The motivation is that by collecting

statistics real-time while testing is being performed enables a reliable and up-to-date statistic collection process to check network reliability. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

In regards to claims 40 and 44, Numminen and Oommen do not explicitly teach collecting the first statistic occurs while performing testing.

Tiedemann in the same field of endeavor teaches collecting the first statistic occurs while performing testing function (column 14 lines 40-57).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen and Oommen's teaching by incorporating the steps of collecting the first statistic occurs while performing testing as taught by Oommen. The motivation is that by collecting statistics real-time while testing is being performed enables a reliable and up-to-date statistic collection process to check network reliability. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

In regards to claim 44, Numminen teaches a memory (column 7 line 27, memory media) communicatively coupled to a digital signal processing device (DSPD) (column 7 line 26, a microprocessor).

12. Claims 14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakadura and Engbersen as applied to claim 6 above and further in view of Kobayasi.

Sakadura and Engbersen teach a method for testing one or more channels in a wireless data communication system, comprising: receiving a plurality of test packets via a forward traffic channel as described in the rejections of claim 6 above.

Sakadura and Engbersen do not explicitly teach field indicative of whether any loop back packets were lost due to buffer overflow and a field indicative of a number of MAC packets received in a Physical Layer packet containing the test packet covered by the record.

Kobayasi in the same field of endeavor teaches, (column 2 lines 55-67) a test being started by issuing a test connectionless packet transmission request message (test start request) from the OS center 1 to SW station 3. The request message contains an identification information ID indicating terminal SW station 6. SW station 3 generates a test packet with the identification address of terminal SW station 6 set as its destination address DA and the identification address of its home station (SW station 3) set as its source address SA. The test packet is output to terminal SW station 6. In SW stations 4 and 5, test packets are processed as normal packets and transferred to terminal SW station 6. On receipt of the test packet, terminal SW station 6 outputs the packet with its DA and SA inverted. That is, the packet is returned from terminal SW station 6 to SW station 3, and it is reported to the OS center 1 upon re-arrival of the packet at the source SW station 3. Kobayasi further teaches the L2-PDU shown in FIG.

783 is an example of a BOM cell. The 2 bytes preceded by the header field stores a segment type ST, sequence number SN, and message identifier MID (or a multiplex identifier). The sequence number SN is a serial number assigned to a transferred cell for convenience in detecting the cell if it is lost or mistakenly inserted.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sakadura and Engbersen's system/method by incorporating the steps of having source id and sequence number in test packets as taught by Kobayasi. The motivation is that having a source and sequence number enables a system to easily and efficiently identify the source of the test packets and number of packets received or lost due to overflow for statistical record keeping. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Allowable Subject Matter

13. Claims 1, 2, 5, 45-60, 64 and 66 are allowed.

Response to Arguments

14. Applicant's arguments see pages 17-41 of the Remarks section, filed 4/22/2009, with respect to the rejections of the claims have been fully considered.

Claim 6:

Applicant argues that (see page 21) Sakakura fails to show test settings selected from among a plurality of possible test settings.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "test settings selected from among a plurality of possible test settings") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that (see page 22) Sakakura test "information" provided in FIG. 4 does not include indications of loop back packet transmission procedures to be performed during testing.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "indications of loop back packet transmission procedures to be performed during testing") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that (see page 22) Sakakura fails to configure one or more channels based on test settings in the first message as claimed.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "configure one or more channels based on test settings in the first message") are not recited in the rejected claim(s). Although the claims are interpreted in light of the

specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that (see page 22) other differences exist between the claim language and Sakakura; For example, "transmit signaling data via the one or more auxiliary channels if indicated by the selected test settings to test the one or more auxiliary channels" is not shown in Sakakura

In response to applicant's argument that the references fail to show certain features of applicant’s invention, it is noted that the features upon which applicant relies (i.e., “transmit signaling data via the one or more auxiliary channels if indicated by the selected test settings to test the one or more auxiliary channels”) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that (see page 23) Engbersen is relied on to show "loop back packets include the parameter values descriptive of the test packets."

In response to applicant's argument that the references fail to show certain features of applicant’s invention, it is noted that the features upon which applicant relies (i.e., “loop back packets include the parameter values descriptive of the test packets”) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furhtermore, Engbersen is relied upon to teach the limitations of “parameter values for each test

<u>packet comprise at least one of a serving sector from which the test packet was received, a sequence number of the test packet, and a length of the test packet" as recited in claim 6.</u>

Claim 28:

Applicant argues that (see page 23) neither Sakakura nor Engbersen identify parameter values descriptive of the test packets and excluding known test data as claimed.

However, Examiner respectfully disagrees. Sakakura and Engbersen do indeed teach the cited limitations. Specifically, Sakakura teaches identifying parameter values descriptive of the test packets in the first data transmission and excluding known test data, forming a second data transmission with the identified parameter values for the received test packets; and transmitting the second data transmission via a second channel (column 3 lines 40-44, Upon reception of the accumulated test result (satisfies the limitation "identifying parameter values descriptive of the test packets in the first data transmission and excluding known test data"; wherein test results are not actual known test data), the start-point terminal 31 transmits the result (i.e. interpreted as forming a second data transmission with the identified parameter values for the received test packets) to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as second/reverse channel).

Claim 29:

Applicant argues that (see page 24) Sakakura fails to "exclude known test data" as claimed, and the operation of the loop back packets in the manner claimed materially differs from Sakakura and Engbersen. Neither reference shows loop back packets coveting zero or more test packets, excluding known test data, and including the transmission source and sequence number of any covered test packet.

However, Examiner respectfully disagrees. Sakakura and Engbersen do indeed teach the cited limitations. Specifically, Sakakura teaches each loop back packet covers zero or more test packets, excludes known test data, and includes a transmission source (column 3 lines 40-44, Upon reception of the accumulated test result (satisfies the limitation “identifying parameter values descriptive of the test packets in the first data transmission and excluding known test data”; wherein test results are not actual known test data), the start-point terminal 31 transmits the result (i.e. interpreted as forming a second data transmission with the identified parameter values for the received test packets) to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as second/reverse channel). Sakakura does not explicitly teach a sequence number of each covered test packet; and means for updating a plurality of variables for a plurality of transmission sources based on the transmission source and the sequence number of each test packet covered by the received packets. Engbersen teaches (abstract, column 19 lines 17-20, For detecting errors, the test information would include an input address indicating the source of the test packet, a <u>sequence number</u> defining the order in which the packet should arrive at

the destination, time bits relating to the packet length and/or to the expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Each analyzer at a receiving station operates autonomously from the senders and processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Based on this information, the transputer either performs statistical computations (e.g. counting of the faulty events) (i.e. interpreted as updating varibles)).

Claim 30:

Applicant argues that (see page 24) Sakakura does not receive a second data transmission via a second data channel, and exclusion of known test data is discussed above, which Sakakura simply does not do. Further, Sakakum and/or Engbersen do not show parameter values configured to be used to update a plurality of variables employable in testing the one or more channels, updating a plurality of variables based on the parameter values included in the second data transmission, or determining a packet error rate based on information included in the second data transmission. No packet error rate is determined, no parameter values configured to update variables, and no updating based on parameter values.

However, Examiner respectfully disagrees with the Applicant's assertion. Sakakura and Engbersen does indeed teach the cited limitations. Specifically, Sakadura teaches a method for testing one or more channels in a wireless data communication system (system in figure 2), comprising: receiving a first data transmission comprising

test packets of known test data via a first channel (column 3 lines 1-5, the test data is predetermined pattern data, e.g., "100111001". These test conditions are input through the console 11 for each terminal to be sequentially down-loaded (i.e. received) therein. The channel and direction used to transmit this pattern from cellular automobile telephone exchange 20 to terminal 31 is interpreted as first/forward channel); identifying parameter values descriptive of the test packets in the first data transmission and excluding known test data, forming a second data transmission with the identified parameter values for the received test packets; and transmitting the second data transmission via a second channel (column 3 lines 40-44, Upon reception of the accumulated test result, the start-point terminal 31 transmits the result (i.e. interpreted as loop back packets) to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as second/reverse channel). Sakakura does not explicitly teach parameter values for each test packet comprise at least one of a serving sector from which the test packet was received, a sequence number of the test packet, and a length of the test packet. In regards to claim 8, Sakakura teaches the second data transmission comprises a plurality of loop back packets but does not explicitly teach loop back packets include the parameter values descriptive of the test packets. Engbersen teaches (abstract, column 19 lines 17-20, For detecting errors, the test information would include an input address indicating the source of the test packet, a sequence number defining the order in which the packet should arrive at the destination, time bits relating to the packet length and/or to the

expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Each analyzer at a receiving station operates autonomously from the senders and processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Based on this information, the transputer either performs statistical computations (e.g. counting of the faulty events) (i.e. interpreted as updating varibles)). Further, in regards to claims 30 and 31, regarding packet error rate, Engbersen teaches error detection is performed by analyzing the arriving packets at the output of the assumed fault path for unexpected contents.

Claim 31:

Applicant argues that (see page 25) the combination of Sakakura and/or Engbersen fails to show determining packet error rote, does not exclude known test data in the manner claimed, operate loop back packets as claimed, anddoes not update a plurality of variables in the manner claimed.

However, Examiner respectfully disagrees with the Applicant's assertion. Sakakura and Engbersen does indeed teach the cited limitations. Specifically, Sakadura teaches a method for testing one or more channels in a wireless data communication system (system in figure 2), comprising: receiving a first data transmission comprising test packets of known test data via a first channel (column 3 lines 1-5, the test data is predetermined pattern data, e.g., "100111001". These test conditions are input through the console 11 for each terminal to be sequentially down-loaded (i.e. received) therein.

The channel and direction used to transmit this pattern from cellular automobile telephone exchange 20 to terminal 31 is interpreted as first/forward channel); identifying parameter values descriptive of the test packets in the first data transmission and excluding known test data, forming a second data transmission with the identified parameter values for the received test packets; and transmitting the second data transmission via a second channel (column 3 lines 40-44, Upon reception of the accumulated test result, the start-point terminal 31 transmits the result (i.e. interpreted as loop back packets) to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as second/reverse channel). Sakakura does not explicitly teach parameter values for each test packet comprise at least one of a serving sector from which the test packet was received, a sequence number of the test packet, and a length of the test packet. In regards to claim 8, Sakakura teaches the second data transmission comprises a plurality of loop back packets but does not explicitly teach loop back packets include the parameter values descriptive of the test packets. Engbersen teaches (abstract, column 19 lines 17-20, For detecting errors, the test information would include an input address indicating the source of the test packet, a sequence number defining the order in which the packet should arrive at the destination, time bits relating to the packet length and/or to the expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Each analyzer at a receiving station operates autonomously from the senders and processes all received

traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Based on this information, the transputer either performs statistical computations (e.g. counting of the faulty events) (i.e. interpreted as updating varibles)). Further, in regards to claims 30 and 31, regarding packet error rate, Engbersen teaches error detection is performed by analyzing the arriving packets at the output of the assumed fault path for unexpected contents.

Claim 39:

Applicant argues that (see page 25) the Sakakura and Engbersen references fail to teach loop back packets that exclude known test data and include a transmission source and a sequence number of any covered test packet as claimed. Further, the cited reference do not update a plurality of transmission sources in the manner claimed, including but not limited to based on the sequence number of any test packet covered by the received loop back packets.

However, Examiner respectfully disagrees with the Applicant's assertion. Sakakura and Engbersen does indeed teach the cited limitations. Specifically, Sakadura teaches an apparatus (Figure 2, cellular automobile telephone exchange 20) in a wireless data communication system comprising: means for processing a plurality of test packets of known test data for transmission via a forward traffic channel (column 3 lines 1-5, the test data is predetermined pattern data, e.g., "100111001". These test conditions are input through the console 11 for each terminal to be sequentially down-loaded therein. The channel and direction used to transmit this pattern from cellular

automobile telephone exchange 20 to terminal 31 is interpreted as forward channel); means for processing a plurality of loop back packets received via a reverse traffic channel, wherein each loop back packet covers zero or more test packets, excludes known test data, and includes a transmission source (column 3 lines 40-44, Upon reception of the accumulated test result, the start-point terminal 31 transmits the result to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as reverse channel). Sakakura does not explicitly teach a sequence number of each covered test packet; and means for updating a plurality of variables for a plurality of transmission sources based on the transmission source and the sequence number of each test packet covered by the received packets. Engbersen teaches (abstract, column 19 lines 17-20, For detecting errors, the test information would include an input address indicating the source of the test packet, a sequence number defining the order in which the packet should arrive at the destination, time bits relating to the packet length and/or to the expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Each analyzer at a receiving station operates autonomously from the senders and processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Based on this information, the transputer either performs statistical computations (e.g. counting of the faulty events) (i.e. interpreted as updating varibles)).

Claim 61:

Applicant argues that (see page 26) the no controller operative to "form aplumlity of loop back packets for the plurality of received test packets" is shown by the combination of Sakakura and Engbersen, and no loop back packet that excludes known test data as claimed. Further, no loop back packet including the transmission source and the sequence number of any covered test packet is provided in the cited references.

However, Examiner respectfully disagrees with the Applicant's assertion. Sakakura and Engbersen does indeed teach the cited limitations. Specifically, Sakadura teaches an apparatus (Figure 2, cellular automobile telephone exchange 20) in a wireless data communication system comprising: means for processing a plurality of test packets of known test data for transmission via a forward traffic channel (column 3 lines 1-5, the test data is predetermined pattern data, e.g., "100111001". These test conditions are input through the console 11 for each terminal to be sequentially down-loaded therein. The channel and direction used to transmit this pattern from cellular automobile telephone exchange 20 to terminal 31 is interpreted as forward channel); means for processing a plurality of loop back packets received via a reverse traffic channel, wherein each loop back packet covers zero or more test packets, excludes known test data, and includes a transmission source (column 3 lines 40-44, Upon reception of the accumulated test result, the start-point terminal 31 transmits the result to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as reverse channel). Sakakura does not explicitly

teach a sequence number of each covered test packet; and means for updating a plurality of variables for a plurality of transmission sources based on the transmission source and the sequence number of each test packet covered by the received packets. Engbersen teaches (abstract, column 19 lines 17-20, For detecting errors, the test information would include an input address indicating the source of the test packet, a sequence number defining the order in which the packet should arrive at the destination, time bits relating to the packet length and/or to the expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Each analyzer at a receiving station operates autonomously from the senders and processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Based on this information, the transputer either performs statistical computations (e.g. counting of the faulty events) (i.e. interpreted as updating varibles)).

Claim 63:

Applicant argues that (see page 27) the loop back packets as claimed are not shown in the cited references, alone or in combination. Further, no transmit data processor operative to process test packets at the selected rates on thereverse traffic channel are provided in the cited references.

However, Examiner respectfully disagrees with the Applicant’s assertion. Sakakura and Engbersen does indeed teach the cited limitations. Specifically, Sakadura teaches an apparatus (Figure 2, cellular automobile telephone exchange 20) in a

wireless data communication system comprising: means for processing a plurality of test packets of known test data for transmission via a forward traffic channel (column 3 lines 1-5, the test data is predetermined pattern data, e.g., "100111001". These test conditions are input through the console 11 for each terminal to be sequentially downloaded therein. The channel and direction used to transmit this pattern from cellular automobile telephone exchange 20 to terminal 31 is interpreted as forward channel); means for processing a plurality of loop back packets received via a reverse traffic channel, wherein each loop back packet covers zero or more test packets, excludes known test data, and includes a transmission source (column 3 lines 40-44, Upon reception of the accumulated test result, the start-point terminal 31 transmits the result to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as reverse channel). Sakakura does not explicitly teach a sequence number of each covered test packet; and means for updating a plurality of variables for a plurality of transmission sources based on the transmission source and the sequence number of each test packet covered by the received packets. Engbersen teaches (abstract, column 19 lines 17-20, For detecting errors, the test information would include an input address indicating the source of the test packet, a sequence number defining the order in which the packet should arrive at the destination, time bits relating to the packet length and/or to the expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Each analyzer at a receiving station

operates autonomously from the senders and processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Based on this information, the transputer either performs statistical computations (e.g. counting of the faulty events) (i.e. interpreted as updating varibles)).

Claim 67:

Applicant argues that (see page 27) the no receive data processor operative to process loop back packets as claimed is shown in Sakakura and/or Engbersen, particularly where loop back packets exclude known test data. Further, no controller operative to update a plurality of variables for a plurality of transmission sources in the manner claimed is shown in the cited references.

However, Examiner respectfully disagrees with the Applicant's assertion. Sakakura and Engbersen does indeed teach the cited limitations. Specifically, Sakadura teaches an apparatus (Figure 2, cellular automobile telephone exchange 20) in a wireless data communication system comprising: means for processing a plurality of test packets of known test data for transmission via a forward traffic channel (column 3 lines 1-5, the test data is predetermined pattern data, e.g., "100111001". These test conditions are input through the console 11 for each terminal to be sequentially down-loaded therein. The channel and direction used to transmit this pattern from cellular automobile telephone exchange 20 to terminal 31 is interpreted as forward channel); means for processing a plurality of loop back packets received via a reverse traffic channel, wherein each loop back packet covers zero or more test packets, excludes

known test data, and includes a transmission source (column 3 lines 40-44, Upon reception of the accumulated test result, the start-point terminal 31 transmits the result to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as reverse channel). Sakakura does not explicitly teach a sequence number of each covered test packet; and means for updating a plurality of variables for a plurality of transmission sources based on the transmission source and the sequence number of each test packet covered by the received packets. Engbersen teaches (abstract, column 19 lines 17-20, For detecting errors, the test information would include an input address indicating the source of the test packet, a sequence number defining the order in which the packet should arrive at the destination, time bits relating to the packet length and/or to the expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Each analyzer at a receiving station operates autonomously from the senders and processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Based on this information, the transputer either performs statistical computations (e.g. counting of the faulty events) (i.e. interpreted as updating varibles)). In regards to claim 67, Sakadura teaches an access point (Figure 2, cellular automobile telephone exchange 20), a transmit data processor (figure 2, base station unit 15), receive data processor (figure 2, base station unit 15) while Engbersen teaches a controller (transputer).

Claim 68:

Applicant argues that (see page 28) the loop back packets conforming to these requirementsare not shown in Sakakura and/or Engbersen. Neither reference shows a design with loop back packets that exclude known test data. Further, no means for updating a plurality of variables for a plurality of transmission sources is shown in the cited reference.

However, Examiner respectfully disagrees with the Applicant's assertion. Sakakura and Engbersen does indeed teach the cited limitations. Specifically, Sakadura teaches an apparatus (Figure 2, cellular automobile telephone exchange 20) in a wireless data communication system comprising: means for processing a plurality of test packets of known test data for transmission via a forward traffic channel (column 3 lines 1-5, the test data is predetermined pattern data, e.g., "100111001". These test conditions are input through the console 11 for each terminal to be sequentially down-loaded therein. The channel and direction used to transmit this pattern from cellular automobile telephone exchange 20 to terminal 31 is interpreted as forward channel); means for processing a plurality of loop back packets received via a reverse traffic channel, wherein each loop back packet covers zero or more test packets, excludes known test data, and includes a transmission source (column 3 lines 40-44, Upon reception of the accumulated test result, the start-point terminal 31 transmits the result to the cellular automobile telephone exchange 20 upon making the call C5. The channel and direction used to transmit this pattern to cellular automobile telephone exchange 20 from terminal 31 is interpreted as reverse channel). Sakakura does not explicitly

teach a sequence number of each covered test packet; and means for updating a plurality of variables for a plurality of transmission sources based on the transmission source and the sequence number of each test packet covered by the received packets. Engbersen teaches (abstract, column 19 lines 17-20, For detecting errors, the test information would include an input address indicating the source of the test packet, a sequence number defining the order in which the packet should arrive at the destination, time bits relating to the packet length and/or to the expected packet transmission delay, and a cyclic redundancy code which covers the entire contents of the test packet, including its control portion. Each analyzer at a receiving station operates autonomously from the senders and processes all received traffic in real-time; this enables it to recognize all defined system errors, even those occurring with very low probability, at the packet level. Based on this information, the transputer either performs statistical computations (e.g. counting of the faulty events) (i.e. interpreted as updating varibles)).

Claims 61-63:

In response to applicant's arguments (page 30, Kobayashi does provide a DA and an SA in each Kobayashi test packet, but does not show a loop back packet including both the transmission source and the ,sequence number of each covered packet. Sjoblom does not deal with loop back packets in the cited paragraphs. Further, paragraph [0026] does use the phrase "sequence numbers," but does not state that sequence numbers are provided in test packets, or that each loop back packet includes the sequence number of each covered test packet) against the references individually,

one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In regards to above claims, in conclusion, Examiner further states that, the claim language is broad and in view of the broadest reasonable interpretation of the claim language, the cited references do indeed teach the cited limitations. Furthermore, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Claim 32:

Applicant argues that (see pages 31-33) claim 32 includes a "receiving limitation" and a configuring limitation, not shown by the references, alone or in combination. Dipperstein does not provide selected test settings that "comprise indications for configuring the reverse traffic channel, one or more auxiliary channels, or a combination thereof..."

However, Examiner respectfully disagrees with the Applicant’s assertion. Dipperstein does indeed teach the cited limitations. Specifically, Dipperstein teaches a test settings comprise indications for configuring the reverse traffic channel, one or more auxiliary channels, or a combination thereof and indications of loop back packet transmission procedures to be performed during testing (column 3 lines 11-17, claims 6,

13 and 14, In accordance with the eoc-based message exchange sequence, a user or craftsperson operating a sourcing test set (as an LT device at the central office) activates a MENU key on the test set keypad, which causes the test set's LCD display panel to display a list of options (i.e. test settings indications) available to the user, one of which is a bit error test (BERT). in response to a user invoking an input/output element of test set associated with a bit error test, conducting a command-response message (i.e. message having test setting indications) exchange over auxiliary ISDN channel, through which device clears loopbacks, and then loops back one or more ISDN bearer channels (i.e. reverse traffic channel), and supervisory control processor is operative, in response to a user invoking an input/output element of test set associated with a bit error test, to conduct a command-response message exchange over auxiliary ISDN channel, through which device clears loopbacks, and then loops back one or more ISDN bearer channels (i.e. reverse traffic channel) and, in response to far end device looping back one or more bearer channels (i.e. reverse traffic channel), conducting a bit error rate test over looped back one or more bearer channels (i.e. reverse traffic channel), and providing an indication of a result of bit error rate test supervisory control processor is operative, in response to a user invoking an input/output element of test set associated with a bit error test, to provide a list of prescribed test parameter options (i.e. test settings indications) for entry by the user and, in response to said user entering test parameter options, to transmit a first command message over auxiliary ISDN channel instructing device to clear loopbacks and, in response to device clearing loopbacks, to transmit a second command message

over auxiliary ISDN channel instructing device to loop back said one or more ISDN bearer channels).

Applicant argues (see pages 31-33) that The Dipperstein passages say nothing about "a first message having included therein test settings selected from a plurality of possible test settings, wherein the test settings selected comprise indications for configuring each auxiliary channel and indications of procedures to be performed by each auxiliary channel during testing ..." as required by claim 32.

However, Examiner respectfully submits that, Numminen teaches receiving a first message having included therein test settings selected *from among a plurality of possible test settings* (column 7 lines 18-20 and column 11 lines 4-6, test mode means that the mobile station to be tested is instructed to maintain a connection on a certain transmission channel (i.e. data, traffic or control channel). Applicability of the invention to all mobile communication systems in which a mobile station can operate on data, traffic and control channels (i.e. plurality of possible test settings are related to testing data, traffic or control channel)) for one or more auxiliary channels (column 6 lines 54-56, column 6 lines 66-67 and column 7 lines 1-8, (after selecting data, traffic or control channel) the test equipment sends an immediate assignment 503 which may include various instructions (i.e. record) for the mobile station. Particularly the immediate assignment 503 contains so-called test octets (i.e. record) in which the first two bits indicate the contents of the test of the rest octet. By the priority date of this patent application values 11 and 10 of the values of the first two bits of the rest octet have been reserved but values 01 and 00 are unused. In accordance with a preferred

embodiment of the invention at least one of these values can be reserved to indicate that in response to the immediate assignment 503 the mobile station to be tested has to set itself in a special test mode); configuring each auxiliary channel based on test settings applicable to the auxiliary channel (column 7 lines 46-50, At first the test equipment sends a comparison and statistical operation start command associated with the data channel, which command can be called CLOSE_Multi-slot_loop_CMD. The close command may include an identifier on the basis of which the mobile station identifies the G loop. Numminen further teaches (column 11 lines 4-6) mobile station can perform testing on traffic and control channels (i.e. auxiliary channel) as well); and transmitting each configured auxiliary channel on reverse link in accordance with the applicable test settings (column 2 lines 24-31, The method according to the invention is characterized in that it is comprised of steps wherein a test signal is received in the downlink direction, the test signal received is compared with a known form of the test signal, information produced by the comparison about errors detected in the received test signal is stored, and a signal representing the information stored is sent uplink) to test the configured auxiliary channel (column 7 lines 18-20 and column 11 lines 4-6, test mode means that the mobile station to be tested is instructed to maintain a connection on a certain transmission channel. Applicability of the invention to all mobile communication systems in which a mobile station can operate on data, traffic and control channels (i.e. overhead or auxiliary channels)). Numminen teaches in column 1 lines 35-40, Tests usually employ a technique in which a mobile station receives a downlink frame from the SS and sends back to the SS a corresponding uplink frame

which contains the equivalent number of bits. The mobile station may even recycle to the SS the same individual bits that it received in the downlink direction. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues (see pages 31-33) that Numminen fails to receive a first message having test settings selected from a plurality of possible test settings, but simply provides a "test Signal" on the forward link and compares the signal to a known test signal, with no test settings provided as required by the claim language; Numminen, having not received the requisite test settings, cannot configure one or more channels based on selected test settings.

However, Examiner respectfully disagrees with the Applicant's assertion. Numminen does indeed teach the cited limitations. Specifically, Numminen teaches receiving a first message having included therein test settings selected *from among a plurality of possible test settings* (column 7 lines 18-20 and column 11 lines 4-6, test mode means that the mobile station to be tested is instructed to maintain a connection on a certain transmission channel (i.e. data, traffic or control channel). Applicability of the invention to all mobile communication systems in which a mobile station can operate on data, traffic and control channels (i.e. plurality of possible test settings are related to testing data, traffic or control channel)) for one or more auxiliary channels (column 6 lines 54-56, column 6 lines 66-67 and column 7 lines 1-8, (after selecting data, traffic or

control channel) the test equipment sends an immediate assignment 503 which may include various instructions (i.e. record) for the mobile station. Particularly the immediate assignment 503 contains so-called test octets (i.e. record) in which the first two bits indicate the contents of the test of the rest octet. By the priority date of this patent application values 11 and 10 of the values of the first two bits of the rest octet have been reserved but values 01 and 00 are unused. In accordance with a preferred embodiment of the invention at least one of these values can be reserved to indicate that in response to the immediate assignment 503 the mobile station to be tested has to set itself in a special test mode); configuring each auxiliary channel based on test settings applicable to the auxiliary channel (column 7 lines 46-50, At first the test equipment sends a comparison and statistical operation start command associated with the data channel, which command can be called CLOSE_Multi-slot_loop_CMD. The close command may include an identifier on the basis of which the mobile station identifies the G loop. Numminen further teaches (column 11 lines 4-6) mobile station can perform testing on traffic and control channels (i.e. auxiliary channel) as well); and transmitting each configured auxiliary channel on reverse link in accordance with the applicable test settings (column 2 lines 24-31, The method according to the invention is characterized in that it is comprised of steps wherein a test signal is received in the downlink direction, the test signal received is compared with a known form of the test signal, information produced by the comparison about errors detected in the received test signal is stored, and a signal representing the information stored is sent uplink) to test the configured auxiliary channel (column 7 lines 18-20 and column 11 lines 4-6, test

mode means that the mobile station to be tested is instructed to maintain a connection on a certain transmission channel. Applicability of the invention to all mobile communication systems in which a mobile station can operate on data, traffic and control channels (i.e. overhead or auxiliary channels)). Numminen teaches in column 1 lines 35-40, Tests usually employ a technique in which a mobile station receives a downlink frame from the SS and sends back to the SS a corresponding uplink frame which contains the equivalent number of bits. The mobile station may even recycle to the SS the same individual bits that it received in the downlink direction.

It is for the same reasons, Examiner respectfully disagrees with the Applicant's assertion (see pages 31-33) that Numminen fails to perform material requirements in claim 32, including but not limited to receiving a first message having the required test settings, and configuring auxiliary channels based on selected test settings in the first message.

It is for the same reasons, Examiner respectfully disagrees with the Applicant's assertion (see pages 31-33) that no message is provided by the Numminen design that includes selected test settings as the term "test settings" is used in the claim.

Applicant argues (see pages 31-33) that Dipperstein does not disclose or suggest providing indications on configuring a auxiliary channel, as that term is commonly understood and employed in the current specification. Configuring a auxiliary channel is discussed at various places in the current specification.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., pages 24-26 or Remark seciton) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues (see pages 31-33) that Dipperstein provides for certain "parameters" to be specified, but these parameters have nothing to do with configuring the auxiliary channel.

However, Examiner respectfully disagrees with the Applicant's assertion. Dipperstein does indeed teach the cited limitations. Specifically, Dipperstein teaches a test settings comprise indications for configuring the reverse traffic channel, one or more auxiliary channels, or a combination thereof and indications of loop back packet transmission procedures to be performed during testing (column 3 lines 11-17, claims 6, 13 and 14, In accordance with the eoc-based message exchange sequence, a user or craftsperson operating a sourcing test set (as an LT device at the central office) activates a MENU key on the test set keypad, which causes the test set's LCD display panel to display a list of options <u>(i.e. test settings indications)</u> available to the user, one of which is a bit error test (BERT). in response to a user invoking an input/output element of test set associated with a bit error test, conducting a command-response message <u>(i.e. message having test setting indications)</u> exchange over auxiliary ISDN channel, through which device clears loopbacks, and then loops back one or more ISDN bearer channels <u>(i.e. reverse traffic channel)</u>, and supervisory control processor is operative, in response to a user invoking an input/output element of test set associated

with a bit error test, to conduct a command-response message exchange over auxiliary ISDN channel, through which device clears loopbacks, and then loops back one or more ISDN bearer channels (i.e. reverse traffic channel) and, in response to far end device looping back one or more bearer channels (i.e. reverse traffic channel), conducting a bit error rate test over looped back one or more bearer channels (i.e. reverse traffic channel), and providing an indication of a result of bit error rate test supervisory control processor is operative, in response to a user invoking an input/output element of test set associated with a bit error test, to provide a list of prescribed test parameter options (i.e. test settings indications) for entry by the user and, in response to said user entering test parameter options, to transmit a first command message over auxiliary ISDN channel instructing device to clear loopbacks and, in response to device clearing loopbacks, to transmit a second command message over auxiliary ISDN channel instructing device to loop back said one or more ISDN bearer channels). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues (see pages 31-33) that Col 7 lines 18-20 and col 11 lines 4-6 in Numminen simply say that the mobile station maintains a connection on a certain transmission channel.

However, Examiner respectfully disagrees with the Applicant's interpretation of the cited portion of Numminen. The cited portion teaches applicability of the invention to all mobile communication systems in which a mobile station can operate on data, traffic and control channels . As such, the inventive step of testing as disclosed by Numminen can be operated on data, traffic and control channels for all mobile stations in a mobile communication system.

Applicant argues that (see pages 31-33) Numminen does not show "configuring the at least one or more channels based on the selected test settings..." as required by claim 31, as amended.

However, Examiner respectfully disagrees with the Applicant's assertion. Numminen does indeed teach the cited limitations. Specifically, Numminen teaches *configuring the one or more channels based on the selected test settings in the first message* (column 7 lines 46-47 and column 7 lines 59-61 and column 9 lines 10-11, at first the test equipment sends a comparison and statistical operation start command associated with the data channel (i.e. associating a command with a particular data channel, leaving other data channels alone satisfies the limitation *selected test settings* (selecting a particular data channel for testing)). The mobile station activates the test loop in a certain time after it has sent the acknowledge).

Applicant argues that (see pages 31-33) Gillespie purportedly teaches an auxiliary control channel. (Office Aciton, p. 16) Applicants do not see this in the cited passage, namely Gillespie, Col. 5, 55-58, which describes a cell site controller

managing radio channels at the site, supervising calls, turning the radio transmitter on and off, etc. This has nothing to do with the present claims.

However, Examiner respectfully disagrees. Firstly. Gillespie in column 5, lines 55-58 teaches the cell site controller 41 manages each of the radio channels at the site, supervises calls, turns the radio transmitter and receivers on and off, injects data onto the control (interpreted as auxiliary channel) and user channels, and performs diagnostic tests on the cell site equipment. Secondly, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claims 40-44:

Applicant argues (see pages 34-36) that the combination of Numminen, Oommen and Tiedemann does not render claims 40 or 44 obvious, as the claims include limitations not shown by the cited combination. However, Examiner respectfully disagrees with the Applicant’s assertion. Specifically, Numminen teaches a method of collecting data for a first parameter while in idle state and not exchanging data via the link (column 10 lines 1-8, In addition to the testing described above the invention is applicable when a mobile station or a terminal of a cellular radio system in general is in normal use, i.e. moving with its user within the area of the cellular radio system. Then it is for most of the time in the so-called idle mode (i.e. idle state) in which it receives from base stations certain downlink messages and sends occasionally location update

messages (i.e. collecting data for a first parameter “location area”) uplink. The cellular radio system knows at all times the location of every idling mobile station (i.e. first statistics being transmitted data of “location area” for every idling mobile station) with the accuracy of a so-called location area (LA) at least). Numminen teaches collecting a second statistic for a second parameter different from the first parameter while in connected state and exchanging data via the link (column 7 lines 46-47 and column 7 lines 59-61, column 9 lines 10-11 and column 8 lines 29-39, while the G loop is active the mobile station compares the received bit sequence portions to the locally produced portions and measures e.g. the bit error ratio or frame erasure ratio and compiles statistics of the measurement results in a desired manner. Complete statistics or information elements representing the reception error status in general are sent uplink to the test equipment. At first the test equipment sends a comparison and statistical operation start command associated with the data channel. The mobile station activates the test loop in a certain time after it has sent the acknowledge). Numminen teaches receiving a first message requesting the first or second statistic, and sending a second message with the requested first or second statistic (column 8 lines 29-39, while the G loop is active the mobile station compares the received bit sequence portions to the locally produced portions and measures e.g. the bit error ratio or frame erasure ratio and compiles statistics of the measurement results in a desired manner. Complete statistics or information elements representing the reception error status in general are sent uplink to the test equipment). In regards to claims 40-43 Numminen does not explicitly teach, collecting statistics during each of the transactions. Oommen in the

same field of endeavor teaches (column 2 lines 46-49) OTAMD involves requesting statistics and performing diagnostic tests in the MS using a command issued from the network for testing purpose. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen's teaching by incorporating the statistic gathering during transactions as taught by Oommen. The motivation is that by collecting statistics real-time while testing is being performed enables a reliable and up-to-date statistic collection process to check network reliability. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art. In regards to claims 40 and 44, Numminen and Oommen do not explicitly teach collecting the first statistic occurs while performing testing. Tiedemann in the same field of endeavor teaches collecting the first statistic occurs while performing testing function (column 14 lines 40-57). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Numminen and Oommen's teaching by incorporating the steps of collecting the first statistic occurs while performing testing as taught by Oommen. The motivation is that by collecting statistics real-time while testing is being performed enables a reliable and up-to-date statistic collection process to check network reliability. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art. <u>In response to applicant's arguments against the references individually,</u>

one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Combination of References:

In response to Applicant's arguments, Examiner respectfully submits that the following are some rationales which have been used when formulating a 103 rejection:

(1)Combining prior art elements according to known methods to yield predictable results.

(2) Simple substitution of one known element for another to obtain predictable results.

(3) Use of known techniques to improve similar devices (methods or products) in the same way.

(4) Applying a known technique to a known device (method or product) ready for improvement to yield predictable results.

(5) "Obvious to try" – choosing from a finite number of identified, predictable solutions.

(6) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

(7) The TSM test. (Although the Supreme Court cautioned against an overly rigid application of TSM, it also recognized that TSM was one of a number of valid rationales that could be used to determine obviousness)

In response to applicant's argument that the examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See In re Gorman, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SALMAN AHMED whose telephone number is (571)272-8307. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571)272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Salman Ahmed/
Examiner, Art Unit 2419